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DIRECTOR OF INTELLIGENCE, UNITED STATES AIR FORCE

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CONTRIBUTION TO HIE 25Organization, Strength, and Capabilities  
Of The Soviet Air ForcesGENERAL

1. Soviet Military Aviation is composed of the following four major combat components:

- a. The Air Force of the Soviet Army (formerly referred to in intelligence documents as the Military Air Force);
- b. Fighter Aviation of Air Defense (formerly referred to in intelligence documents as the Fighter Defense Force);
- c. Long Range Aviation (formerly referred to as the Long Range Air Force);
- d. Naval Aviation (formerly referred to as the Naval Air Force).

Soviet Military Aviation also includes an element designated "Aviation of Airborne Troops", about which little information is available. In addition, there is the Civil Air Fleet, a semi-military organization responsible for air transportation requirements of the Soviet Union. The four combat components are estimated to have an authorized establishment strength of approximately 20,000 aircraft at the present time. While definite information is lacking, it is possible that the actual strength may be somewhat below that authorized. For details of combat aircraft in operational units, see Appendix "A" and Appendix "B".

2. There are no indications that the Soviet Air Forces will undergo any radical change in organization and over all aircraft strength during the next few years, although the introduction of larger and more complex aircraft would necessitate either an over all increase in personnel or

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TOP SECRET

**TOP SECRET**

reduction in actual numbers of aircraft. Re-equipment with modern aircraft is proceeding and the relative effectiveness of Soviet Military Aviation is increasing rapidly. For example, it is believed that of the total of 9,500 operational fighters in Soviet Military Aviation, about 3,000 are jet aircraft and that the remaining conventional types are being replaced rapidly. Thus, it is estimated that by mid-1952 approximately 4,500 of the total fighter strength will be jet aircraft, and by mid-1953, 8,000. Light jet bombers are presently being introduced into military aviation and it is estimated that 800 will be in service in mid-1952, and that by mid-1954 there will be some 2,500 in service. It is to be expected that should hostilities occur, the substitution of jet for piston-engined aircraft will take place at an even more rapid rate than these estimates indicate.

3. In the strategic bombing field, it is estimated that the 600-700 TU-4's now in use will increase to 1,200 by mid-1952. It is considered probable that a few jet medium bombers will be introduced in 1952 and that substantial numbers of these aircraft may become available in 1953; that a prototype heavy bomber will be produced in 1951-52 and appear in service not later than mid-1953.

4. The Air Force of the Soviet Army is composed of 15 tactical air armies and several small Military District air forces in areas which have no tactical air armies. It has an estimated authorized strength of approximately 15,000 aircraft. Its mission is tactical support for the Soviet land forces. Although the force is designed primarily for operations in support of ground forces, many of its light bombers can operate up to a radius of 500 nautical miles and could be utilized for attacks upon targets other than those in the battle area. The Air Force of the Soviet Army is required to provide fighter defense in its areas of operation, and fighter units deployed in the Zone of the Interior probably will be used to augment the strength of the fighter defense force.

**TOP SECRET**

**TOP SECRET**

5. While there are no indications that the establishment strength of the Air Force of the Soviet Army will change appreciably in the next few years, there is a clearly established trend toward re-equipment with new and modern aircraft. Jet light bombers are now in series production, and it is estimated that there will be some 300 of these aircraft in this force by mid-1951, 700-800 by mid-1952, and 1,300-1,500 by mid-1953. The jet light bomber currently in production has a combat radius of about 400 nautical miles and an estimated speed of 500 knots at sea level. It is believed that an improved jet light bomber with a substantially increased combat radius will become available in operational quantities in 1953-1954. Substantial quantities of jet fighters are being received and it is considered that about 2,000 will be in service by mid-1952.

#### NAVAL AVIATION

6. Soviet Naval Aviation is an integral part of the Soviet Navy and is therefore administered separately from other Soviet Air Forces. Its mission is to support the Naval Fleets, defend the coastal areas, and provide support for the Soviet Army, particularly on the seaward flanks. It has an authorized establishment strength of about 3,000 aircraft, divided among six fleet air forces corresponding to the six surface fleets. The force is entirely land-based, and there is no evidence that the Soviet Union has a carrier borne force in being or under development. The equipment of Naval Aviation is generally comparable to that of the Air Force of the Soviet Army, although re-equipment appears to be taking place at a slower rate than that of the Air Force of the Soviet Army. Jet fighters and jet light bombers probably will be introduced into this force during 1951 or 1952.

#### FIGHTER AVIATION OF AIR DEFENSE

7. The IA PVO, Fighter Aviation of Air Defense, (previously referred to as Fighter Defense Force) is the air arm of the Anti-Aircraft Defense

**TOP SECRET**

**TOP SECRET**

Force (FVC) which also includes anti-aircraft artillery units and early warning systems. It has an estimated establishment strength of 2,000 fighters of which it is believed approximately 1,300 will be jets in 1951. By mid-1952 the entire force will be jets. The best jet fighters now known to be in operational use have an estimated combat ceiling of 46,000 feet and a speed of 540 knots at 30,000 feet. All the fighters known to be in use are day fighters and there is no evidence of the appearance of a fighter equipped with the special devices required for night and all-weather operations. However, it must be assumed that the Soviet Union will develop such an aircraft. It is considered that mid-1952 is a reasonable date for the first appearance of such an interceptor, which might have a combat ceiling of 48,000 feet, a combat radius of 225 nautical miles, and a speed of 530 knots at 30,000 feet.

**LONG RANGE AVIATION**

8. Long Range Aviation is the strategic striking force of the Soviet Union. It has an establishment bomber strength of some 1,700 aircraft, of which it is considered some <sup>600-700</sup> TU-4's currently are assigned to operational units. These aircraft are credited with performance capabilities equal to (or slightly better than) those of the B-29's produced in the United States in 1945. Operating from or staging through bases presently under Soviet control (in Germany, the west and northwest portions of the Soviet Union, and potential bases in northeastern Siberia), TU-4's are now capable of carrying atomic or conventional bombs to all vital targets in Europe and some targets in North America without refueling. While there is no evidence that the Soviet Union has developed a refueling technique, United States and United Kingdom experience demonstrates that no significant difficulties are involved. Using refueling and/or one-way missions, all vital targets in the United States and Canada could be brought within range. Bomber regiments of Long Range Aviation which have not been equipped with TU-4's are equipped with piston-engine light bombers of World War II design.

**TOP SECRET**

In addition to the bomber regiments, there are also some fighter escort and some transport regiments in Long Range Aviation.

9. The striking power of Long Range Aviation will increase substantially during the next few years. It is estimated that the number of TU-4's will have increased to 1,200 by mid-1952 and that a few medium jet bombers will be introduced during 1952. It is considered that substantial numbers of medium jet bombers will become available in 1953, and that heavy bombers with a combat radius of 3,500 nautical miles with a 10,000 pound bomb load will come into operational use by mid-1953. It is considered possible that fighter escort regiments which are equipped at present with piston engine fighters may be re-equipped with jets. A penetration jet fighter with a combat radius of 480 nautical miles, combat ceiling of 45,000 feet, and a maximum speed of 530 knots at 30,000 feet, may become available during 1951. Such a fighter would not be able to escort TU-4's on truly long-range missions.

CIVIL AIR FLEET

10. The Civil Air Fleet is a semi-military organization controlled by the War Ministry and its resources would be available to the armed forces in wartime with a corresponding reduction in civil airlift capacity. At the present time the Civil Air Fleet is employing approximately <sup>1,600</sup> transports on scheduled and non-scheduled operations. These transports have lift capabilities equal to or greater than that of a C-47. It is known that some four-engine transports have been built, but there is no information concerning their use in the Civil Air Fleet. A small number may be available. During the next few years the organization of the Civil Air Fleet is expected to remain substantially as it is at present but the numbers of aircraft employed will probably increase.

AIRLIFT CAPACITY

11. The total number of major transport aircraft, including a portion of the Civil Air Fleet, which could be made available for initial military

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operations is estimated at 1,000 aircraft from the military air forces and possibly 1,100 more, for a vital operation, from the Civil Air Fleet. It is estimated that the maximum capacity for a single airlift, without gliders, at a maximum combat radius of 525 nautical miles would be approximately four airborne divisions (of 7,200 men each). The Soviet Air Forces are known to have conducted experiments with large gliders, but it is not known whether they are regarded as practical for operational use. Until road and rail transport services have improved considerably, the Soviet Union's economy would be adversely affected by the withdrawal, for any appreciable period, of a large proportion of the Civil Air Fleet for employment in military operations. The success of an airborne operation in daylight under conditions of good visibility is largely dependent upon the capability for maintaining local air superiority, and the presence of hostile jet fighters might preclude an airborne operation beyond the combat radius of jet fighter escort.

12. There are, in the estimated stored reserves discussed in the following paragraph, an unknown number of transports, which would be made available when crews could be provided to operate them.

#### RESERVES OF AIRCRAFT

13. It is estimated that in addition to aircraft in training units and rear echelon services, there may be some 20,000 combat aircraft in stored reserve. It is probable that only a portion of these could be made operationally serviceable if required for active operations. It is also estimated that this reserve would be too small to sustain the front line strength for a protracted period of time in any major conflict.

14. It is estimated that, in addition to aircraft in training units and rear echelon services, there may be 20,000 operational type aircraft in stored reserve.

Experience of USAF and USN indicates that effective storage of any large number of aircraft is a complicated and technical operation that requires a considerable amount of material, space, personnel, and time. Evidence does suggest that the U.S.S.R. did attempt to place in "reserve," and maintain, some of the World War II type aircraft available at the end of World War II.

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There is some information to indicate that at least some of these aircraft were placed in reserve under "out-of-doors" storage conditions, and that a minimum effort was made toward use of protective covering. There is evidence that aircraft engines and certain spare parts are prepared for and maintained in storage for short periods. Probably only a part of the stored World War II type aircraft could be made operationally serviceable if required for active service.

The Soviet Union is estimated to have produced in the postwar period many more aircraft than can be accounted for in operational units, training, attrition, pipeline, or test. However, it appears that the newest type jet fighters were initially allocated directly from production to units and that little if any provision was made at that time for reserve stockpiling. In view of the number of jet fighters which are currently estimated to be in units, it may well be that a stockpiling program is underway for this type aircraft. This course of action would not only appear logical from the Kreslin viewpoint in consideration of the vulnerability to attack of the aircraft industry, but is entirely consistent with Soviet doctrine which places great importance on the necessity of war reserves.

#### MOBILIZATION POTENTIAL

15. The Soviet Air Forces could mobilize to an estimated strength of 800,000 personnel by M plus 30 days. Thereafter, the mobilization rate would depend almost entirely on the availability of aircraft and the efficiency of the training establishments. The degree of re-equipment which may have been achieved at any time prior to war would affect both the availability of aircraft and the ability of the training organization to produce specialists. When a large quantity of radar has been brought into general service, it is probable that the Soviet Air Forces will find it difficult to provide skilled men for the many specialist posts involved.

16. At M plus 120 days the total Air Forces establishment could contain approximately 1,250,000 personnel, but the state of training of the additional personnel cannot be assessed. At the end of World War II

**TOP SECRET**

the majority of skilled men were retained permanently. Many of those who were demobilized have since been pressed into service as instructors with the DOSAV (air training organization). It is from this organization that the trained and semi-trained specialists will largely be drawn during the mobilization period. It is likely that the Aero Clubs operated by DOSAV would become elementary flying schools for the Soviet Air Forces.

#### COMBAT EFFICIENCY

17. Although the Soviet Air Forces in the main are now operating increasing numbers of aircraft comparable to those in service with the Western Powers, the reliability of Soviet aircraft may not be as great, and the combat effectiveness of the Soviet Air Forces is believed to be lower in many respects than that of the United States and United Kingdom air forces. It is considered that there is a lack of skilled maintenance personnel and under conditions of sustained combat it is estimated that a smaller percentage of the aircraft in units could be kept operational than would be the case in the United States and United Kingdom air forces. However, the Soviet Union is conducting an intensive training program and it is anticipated that the serviceability rate will improve in the next few years.

18. In World War II, Soviet tactical units proved to be particularly competent in the conduct of close support operations, and in the postwar period training in those operations has been emphasized. Present aircraft equipment for ground support operations is adequate and the tactical units will have increased capabilities as light jet bombers and larger numbers of jet fighters are introduced.

19. The Soviet Union possesses good day interceptors, and in daylight and good visibility its over all interception capability will be relatively good, in spite of the handicap imposed by lack of an adequate quantity of

**TOP SECRET**



**TOP SECRET**

good ground control intercept radar. It is considered that at present the fighter defenses would be relatively ineffectual at night and in conditions of poor visibility, because of the lack of effective airborne intercept radar. It is expected that an all-weather jet interceptor with a combat ceiling of 48,000 feet and a speed of 550 knots probably will become available during 1952.

20. In the field of strategic bombing the Soviet Union has been handicapped by a lack of past combat experience. Nevertheless, there is definite evidence that the Soviet Union intends that the Long Range Aviation shall be capable of undertaking strategic bombing missions by day or night in any weather. It is believed that radar theory is being taught extensively throughout the Air Forces. It is considered that radar navigational devices and radar bombing equipment is available now in sufficient quantities to permit equipment of the present TU-4 force, and that manufacture will keep pace with future manufacture of aircraft. The degree of navigational and bombing accuracy which might be attained with such equipment is unknown. The effectiveness of Soviet bombing attacks could be increased by the use of radar responder beacons clandestinely placed on or near the target, although there is no evidence that this will be done. The combat value of the Long Range Aviation will increase significantly with the introduction of larger numbers of TU-4's and of newer types of aircraft and equipment.

#### EUROPEAN SATELLITE AND CHINESE COMMUNIST AIR FORCES

21. The European satellite air forces have relatively low combat value by U.S. standards but against weak neighboring states they could exercise an appreciable effect. It is anticipated that there will be some increase in effectiveness in the next few years.

22. The Chinese Communist leaders are rapidly forming an air force, and its present strength is estimated at some 650 aircraft and a minimum

**TOP SECRET**

of 15,000 personnel. While considerable progress has been made, it is too early to estimate its ultimate size, capabilities, or efficiency. It is receiving considerable quantities of Soviet equipment and Soviet technicians are rendering technical assistance. It is considered that its future size and capabilities are dependent upon the continuation of the Soviet program of providing equipment and technical aid.

#### DEDUCTIONS

23. With an establishment of approximately 20,000 aircraft at the present time, the Soviet Air Forces are numerically superior to the total strength of the Western Powers. No significant change is expected in the organization of the Soviet Air Forces over the next few years nor is there any evidence to suggest that the front line strength will change materially over the same period. However, it is estimated that the proportion of high performance aircraft will increase considerably and advances in bomber interception and strategic bombing capabilities can be expected.

24. The Air Force of the Soviet Army is numerically superior to Western tactical air forces and is adequate to support all land campaigns which the Soviet Union might be expected to undertake in event of war in the next few years. Its combat value is being increased steadily by re-equipment of fighter and bomber units with high performance jet aircraft.

25. The Soviet Union possesses in quantity excellent day interceptors for fighter defense, but at present is handicapped in the bomber interception field by the lack of efficient all-weather interceptors and effective ground control interception radars. It is anticipated that an all-weather interceptor will probably be introduced during 1952. Difficulties with ground control interception radar will probably have been overcome by the time this interceptor appears in service. Therefore,

**TOP SECRET**

## TOP SECRET

in the year 1952 the Soviet Union's interception system should have reached a state of training and re-equipment sufficient to provide a relatively effective fighter defense system around the most important urban areas.

26. The Soviet Union has and will have the capability in aircraft and trained crews to warrant an attempt to deliver in the United Kingdom and North America the full stockpile of atomic bombs that is and will become available. During the next few years, the strategic bombing capability of the Soviet Long Range Aviation will increase substantially, particularly in view of the increasing atomic bomb stockpile. The introduction of jet medium bombers in 1952 and heavy bombers in 1953 will increase the effectiveness of this force, although the problems connected with high speed bombing and navigation may not be fully solved by that time, due to limitations in the Soviet ability to design and manufacture in quantity the electronic equipment required. The following table indicates the estimated Soviet atomic bomb stockpile at mid-year for the years through 1954:

Mid-1951	50
Mid-1952	120
Mid-1953	205
Mid-1954	315

27. Based on the above considerations, it is estimated that the Soviet Union may assess its present air capabilities as adequate for the conduct of a major war. It is expected that Soviet air capabilities will be improved steadily and will probably reach optimum relative to the Western Powers in 1952. Therefore, a state of readiness which the Soviet Union considers favorable for the conduct of major operations may be reached at any time from the present to 1952.

TOP SECRET

